

Practice CT-AI Online, New CT-AI Study Notes



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ISTQB CT-AI Exam Syllabus Topics:

Topic	Details
Topic 1	<ul style="list-style-type: none">• systems from those required for conventional systems.
Topic 2	<ul style="list-style-type: none">• ML Functional Performance Metrics: In this section, the topics covered include how to calculate the ML functional performance metrics from a given set of confusion matrices.
Topic 3	<ul style="list-style-type: none">• Methods and Techniques for the Testing of AI-Based Systems: In this section, the focus is on explaining how the testing of ML systems can help prevent adversarial attacks and data poisoning.
Topic 4	<ul style="list-style-type: none">• Machine Learning ML: This section includes the classification and regression as part of supervised learning, explaining the factors involved in the selection of ML algorithms, and demonstrating underfitting and overfitting.
Topic 5	<ul style="list-style-type: none">• Test Environments for AI-Based Systems: This section is about factors that differentiate the test environments for AI-based
Topic 6	<ul style="list-style-type: none">• Testing AI-Based Systems Overview: In this section, focus is given to how system specifications for AI-based systems can create challenges in testing and explain automation bias and how this affects testing.
Topic 7	<ul style="list-style-type: none">• Testing AI-Specific Quality Characteristics: In this section, the topics covered are about the challenges in testing created by the self-learning of AI-based systems.
Topic 8	<ul style="list-style-type: none">• Introduction to AI: This exam section covers topics such as the AI effect and how it influences the definition of AI. It covers how to distinguish between narrow AI, general AI, and super AI; moreover, the topics covered include describing how standards apply to AI-based systems.

New CT-AI Study Notes, CT-AI Certification Questions

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ISTQB Certified Tester AI Testing Exam Sample Questions (Q46-Q51):

NEW QUESTION # 46

Which of the following are the three activities in the data acquisition activities for data preparation?

- A. Identifying, gathering, labelling
- B. Feature selecting, feature growing, feature augmenting
- C. Cleaning, transforming, augmenting
- D. Building, approving, deploying

Answer: A

Explanation:

The syllabus defines data acquisition as consisting of three steps:

"Data acquisition: The activity of acquiring data relevant to the business problem to be solved by an ML model, typically involving the activities of identifying, gathering and labelling data." (Reference: ISTQB CT-AI Syllabus v1.0, Section 4.1, page 33 of 99)

NEW QUESTION # 47

Data used for an object detection ML system was found to have been labelled incorrectly in many cases.

Which ONE of the following options is most likely the reason for this problem?

SELECT ONE OPTION

- A. Bias issues
- B. Accuracy issues
- C. Privacy issues
- D. Security issues

Answer: B

Explanation:

The question refers to a problem where data used for an object detection ML system was labelled incorrectly.

This issue is most closely related to "accuracy issues." Here's a detailed explanation:

* Accuracy Issues: The primary goal of labeling data in machine learning is to ensure that the model can accurately learn and make predictions based on the given labels. Incorrectly labeled data directly impacts the model's accuracy, leading to poor performance because the model learns incorrect patterns.

* Why Not Other Options:

* Security Issues: This pertains to data breaches or unauthorized access, which is not relevant to the problem of incorrect data labeling.

* Privacy Issues: This concerns the protection of personal data and is not related to the accuracy of data labeling.

* Bias Issues: While bias in data can affect model performance, it specifically refers to systematic errors or prejudices in the data rather than outright incorrect labeling.

References: This explanation is consistent with the concepts covered in the ISTQB CT-AI syllabus under dataset quality issues and their impact on machine learning models.

NEW QUESTION # 48

Which of the following is a problem with AI-generated test cases that are generated from the requirements?

- A. They are slow and will usually not be able to execute in the time allowed.
- B. They are defect prone because they are unable to detect nuances in the requirements.
- C. They make debugging more complicated because the number of steps is usually high in order to induce the target failure.
- D. They are usually missing the expected results, so verification is difficult or must resort to only detecting significant failures.

Answer: D

Explanation:

AI-generated test cases are often created using machine learning (ML) models or heuristic algorithms. While these can be effective in generating large numbers of test cases quickly, they often suffer from the "test oracle problem." Test Oracle Problem: A test oracle is the mechanism used to determine the expected output of a test case. AI-generated test cases often lack expected results because AI-based tools do not inherently understand what the correct output should be.

Difficulty in Verification: Without expected results, verifying test cases becomes challenging.

Testers must rely on heuristics, anomaly detection, or significant failures, rather than traditional pass/fail conditions.

NEW QUESTION # 49

A system was developed for screening the X-rays of patients for potential malignancy detection (skin cancer).

A workflow system has been developed to screen multiple cancers by using several individually trained ML models chained together in the workflow.

Testing the pipeline could involve multiple kind of tests (I - III):

I. Pairwise testing of combinations

II. Testing each individual model for accuracy

III. A/B testing of different sequences of models

Which ONE of the following options contains the kinds of tests that would be MOST APPROPRIATE to include in the strategy for optimal detection?

SELECT ONE OPTION

- **A. I and II**
- B. Only III
- C. Only II
- D. I and III

Answer: A

Explanation:

The question asks which combination of tests would be most appropriate to include in the strategy for optimal detection in a workflow system using multiple ML models.

* Pairwise testing of combinations (I): This method is useful for testing interactions between different components in the workflow to ensure they work well together, identifying potential issues in the integration.

* Testing each individual model for accuracy (II): Ensuring that each model in the workflow performs accurately on its own is crucial before integrating them into a combined workflow.

* A/B testing of different sequences of models (III): This involves comparing different sequences to determine which configuration yields the best results. While useful, it might not be as fundamental as pairwise and individual accuracy testing in the initial stages.

References:

* ISTQB CT-AI Syllabus Section 9.2 on Pairwise Testing and Section 9.3 on Testing ML Models emphasize the importance of testing interactions and individual model accuracy in complex ML workflows.

NEW QUESTION # 50

Which statement regarding the use of training, validation, and test data sets is correct?

- **A. The data in the test data set must be equivalent to the data in the training data sets and to the data in the validation data sets.**
- B. If limited data is available, it may be better to work without a separate test data set.
- C. If only limited data is available, validation and test data sets can be combined in multiple ways during training.
- D. Optimally, the data should be distributed equally between the training, validation, and test data sets.

Answer: A

Explanation:

The ISTQB CT-AI syllabus (Section 3.2 - Model Evaluation) specifies the correct usage of training, validation, and test data sets. It emphasizes that the test dataset must be representative of the real operational data and must be equivalent in distribution to the training and validation sets, ensuring a fair and unbiased evaluation. Option D precisely matches this requirement.

